

1. A computer system, comprising:

a computer processor,

an operating system operative in connection with the computer processor,

a display responsive to the operating system,

a pointing device including:

a position sensor having an output line, and

a tactile actuator having an input line,

a pointing device driver responsive to the output line of the position sensor and wherein the input line of the tactile actuator is responsive to the pointing device driver,

a general-purpose application responsive to the pointing device driver and to the operating system and in communication with the display, and wherein the pointing device driver is responsive to the general purpose application, and

a profile that maps region changes associated with material displayed on the screen to tactile signals to be sent to the tactile actuator.

2. The computer system of claim 1 wherein the system is operative to detect movement from one group of regions to another and change profiles based on the detected movement.

3. The computer system of claim 2 wherein the system is further operative to send a boundary actuation command to the tactile actuator upon detecting the movement from one group of regions to another.

4. The computer system of claim 2 wherein the groups of regions correspond to different display windows.

5. The computer system of claim 1 wherein the system is operative to automatically determine a range of region attributes and normalize the intensity of the tactile signals based on this determination.

6. The computer system of claim 1 wherein the system is operative to detect a guard band surrounding transitions between regions in the map.
7. The computer system of claim 1 wherein the system is operative to detect a speed of motion from the position sensor and provide tactile signals to the tactile actuator in anticipation of changes in the regions when the speed exceeds a certain value.
8. The computer system of claim 1 wherein the system is operative to detect a speed of motion from the position sensor and simplify tactile signals to the tactile actuator when the speed meets certain criteria.
9. The computer system of claim 1 wherein the system is operative to detect a speed of motion from the position sensor and eliminate tactile signals to the tactile actuator when the speed meets certain criteria.
10. The computer system of claim 1 wherein the profile includes a storage element that specifies whether heuristics are to be applied to determine a relationship between region changes and tactile signals.
11. The computer system of claim 1 wherein the system is operative to change display attributes of a cursor displayed on the screen when the position sensor indicates a change in position.
12. The computer system of claim 1 wherein the pointing device further includes a tactility control and wherein the system is operative to send different tactile signals to the actuator in response to user actuation of the tactility control.
13. The computer system of claim 1 further including a housing and wherein the tactile actuator is a pressure-wave generating tactile actuator mounted inside a portion of the pointing

device housing

14. The computer system of claim 13 wherein the pointing device is a mouse, wherein the housing is a housing of the mouse, and wherein the transducer is mounted inside the housing of the mouse.

15. The computer system of claim 13 wherein the system is operative to send finite duration pulses to the actuator that are no longer than ten cycles long for an individual change in regions.

16. The computer system of claim 1 wherein the position sensor is in a mouse and wherein the actuator is in a mouse pad.

17. The computer system of claim 1 wherein the actuator and the position sensor are in a touch pad.

18. The computer system of claim 1 wherein the profile maps regions that match display regions displayed on the display.

19. The computer system of claim 18 wherein the profile maps regions that correspond to absolute display intensity of the display regions.

20. The computer system of claim 18 wherein the profile maps regions that are arranged in a regularly spaced Cartesian grid.

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